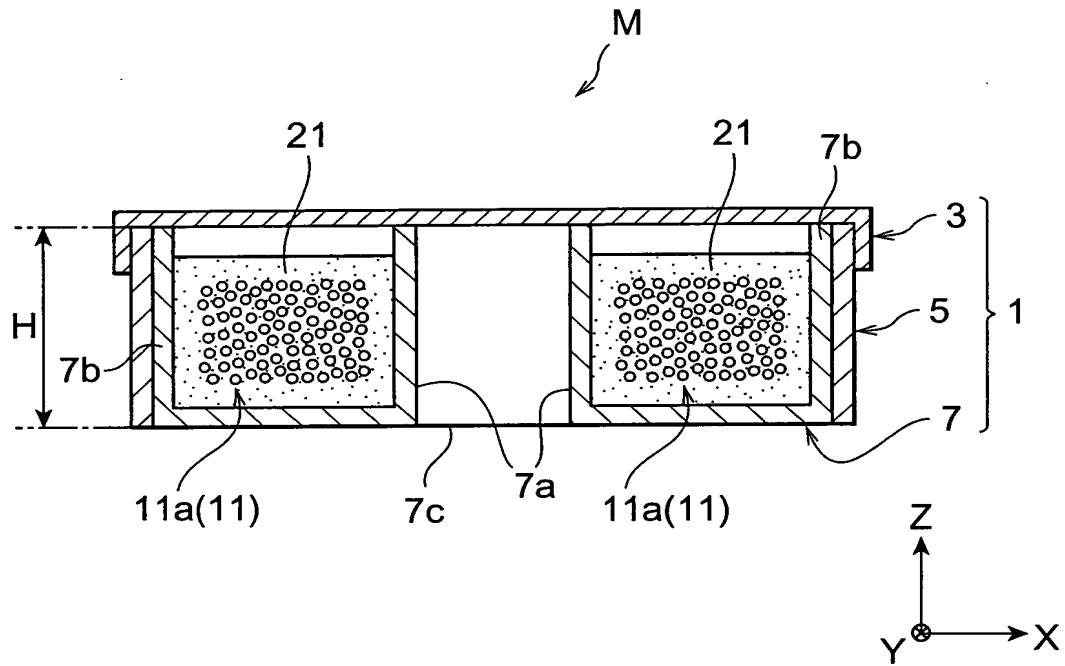
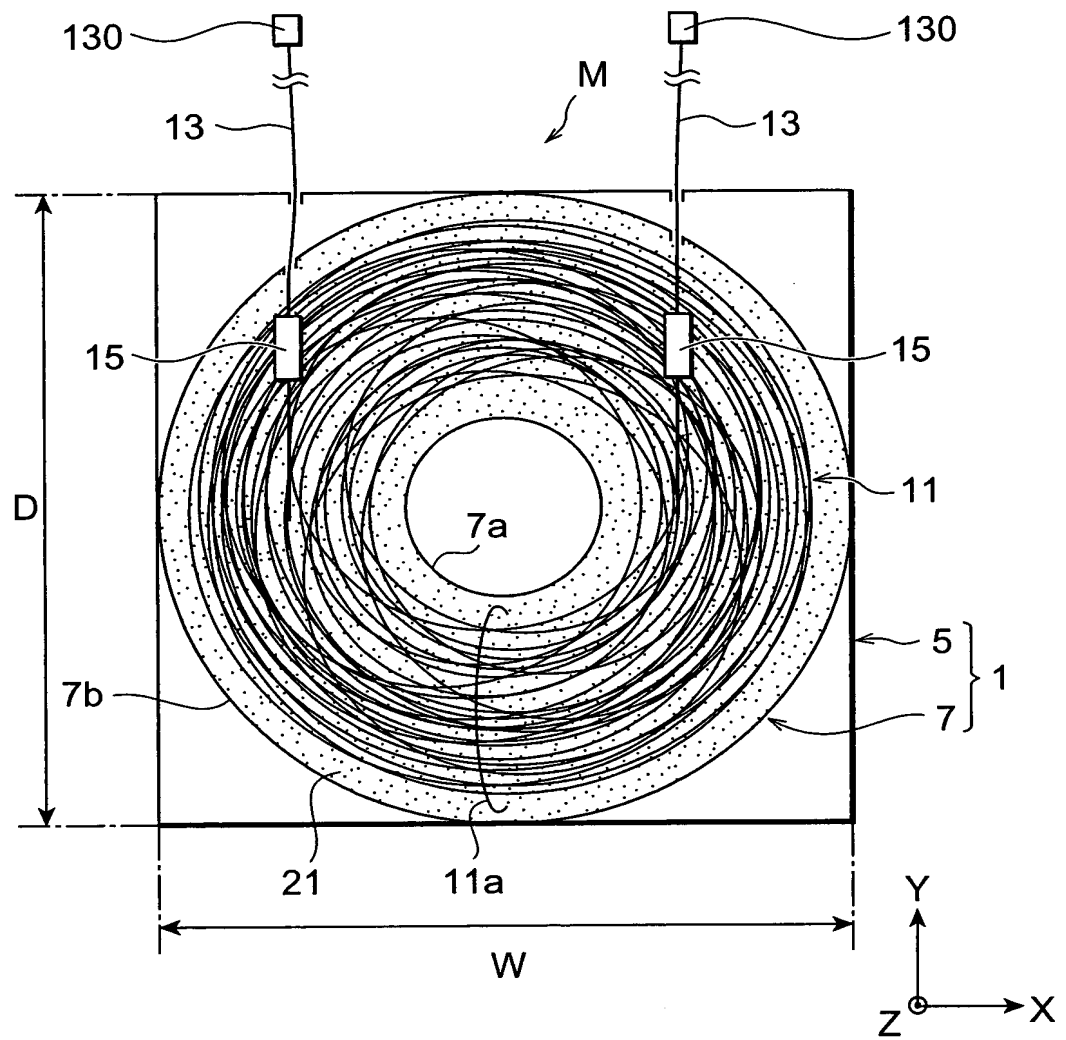
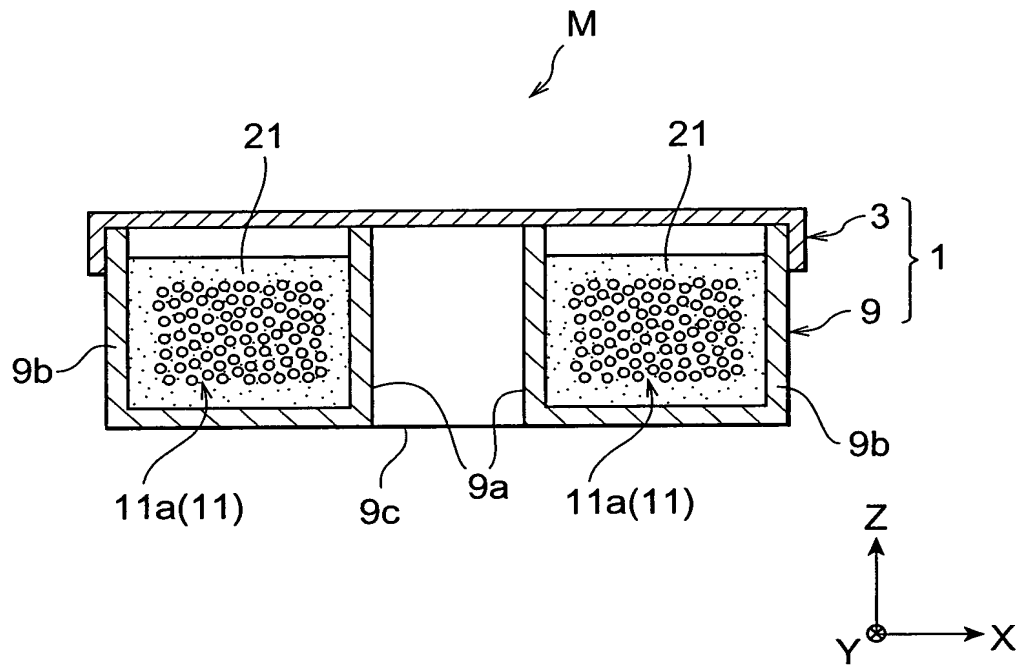
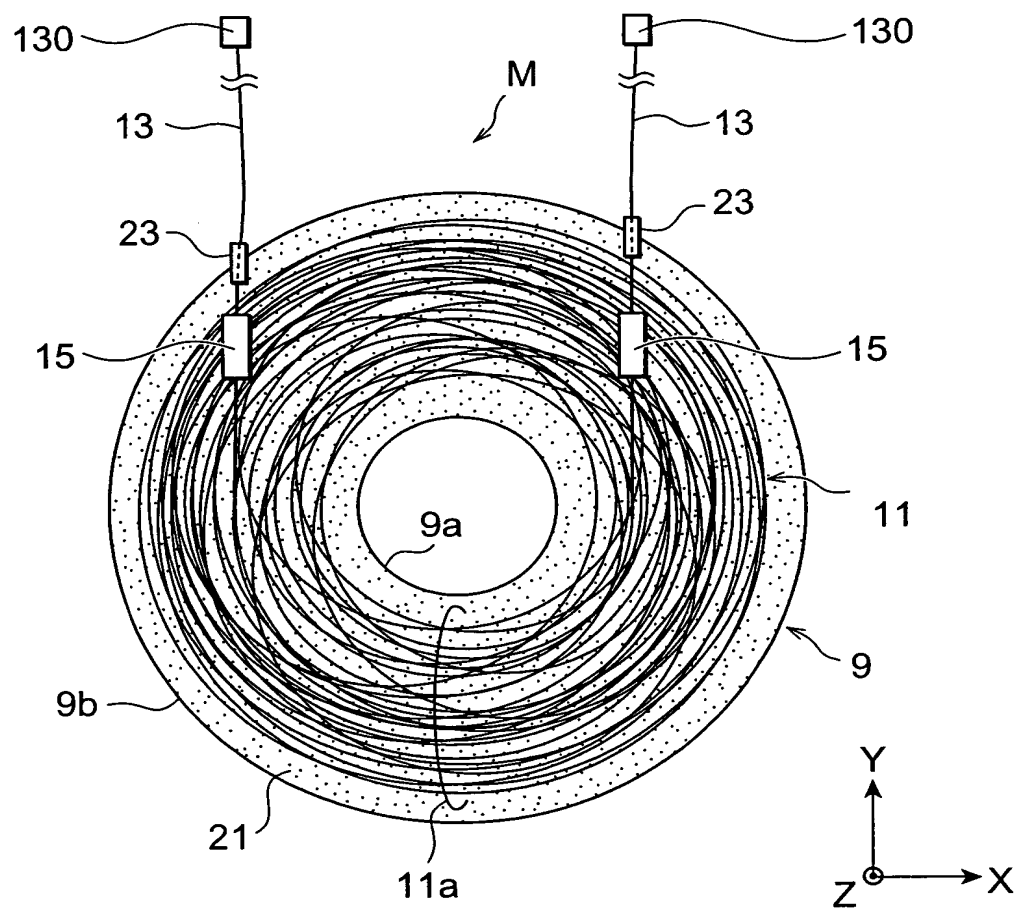


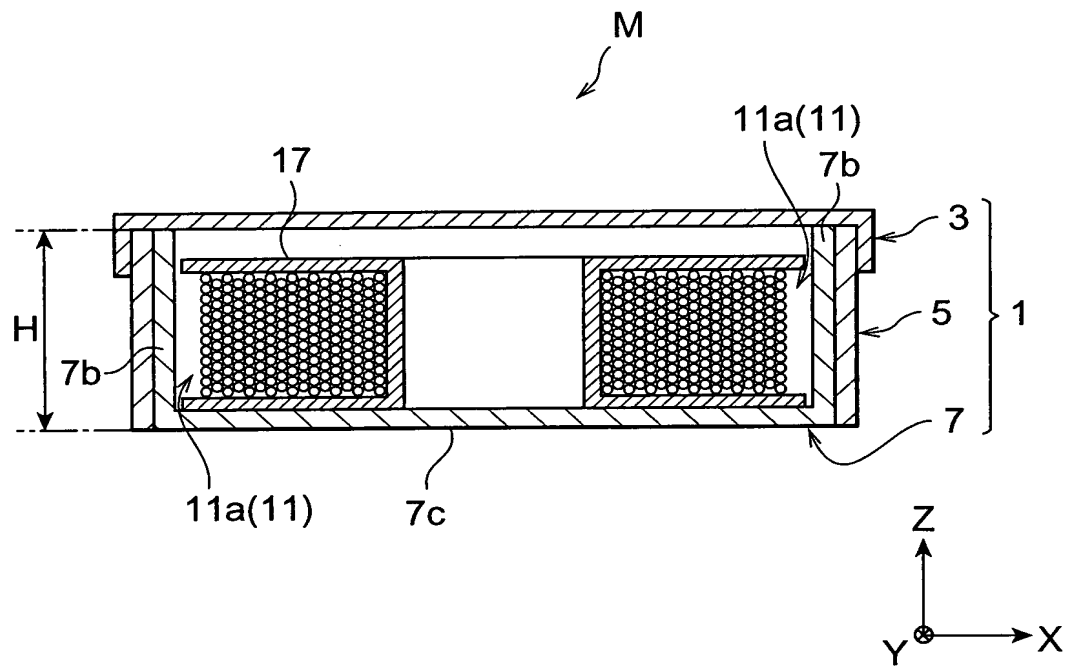
**Fig.1**



**Fig.2**

**Fig.3**

**Fig.4**

**Fig.5**

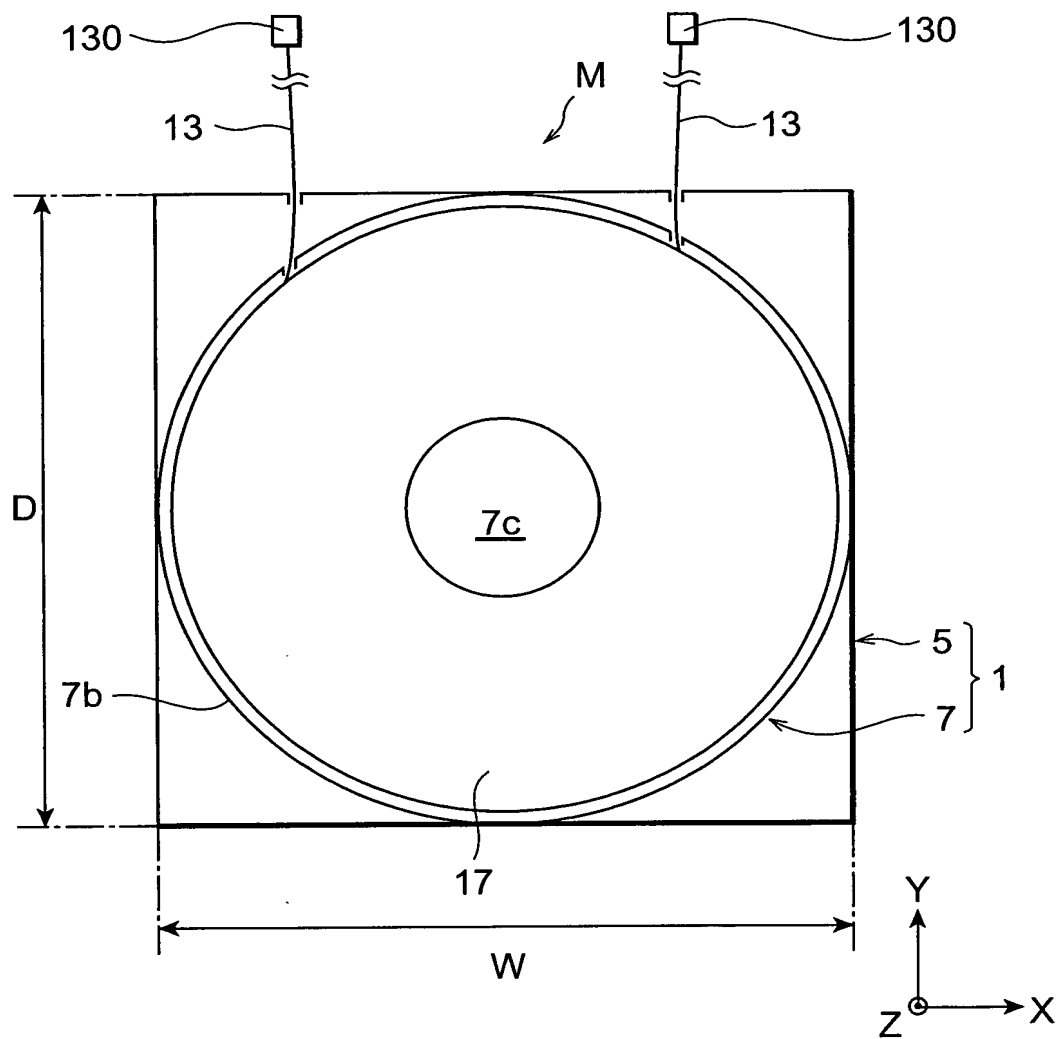
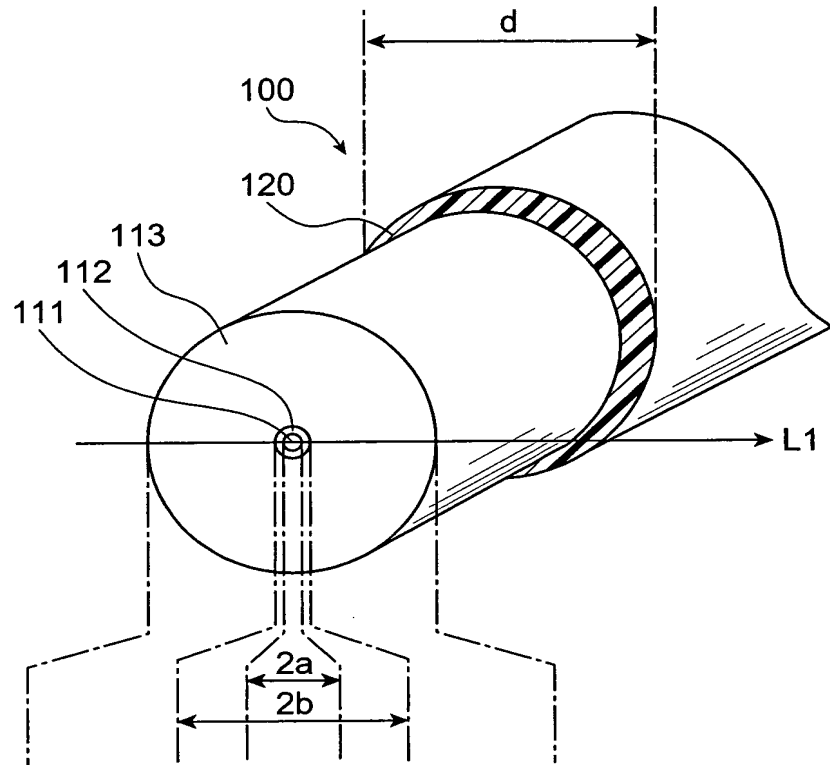
**Fig.6**

Fig.7

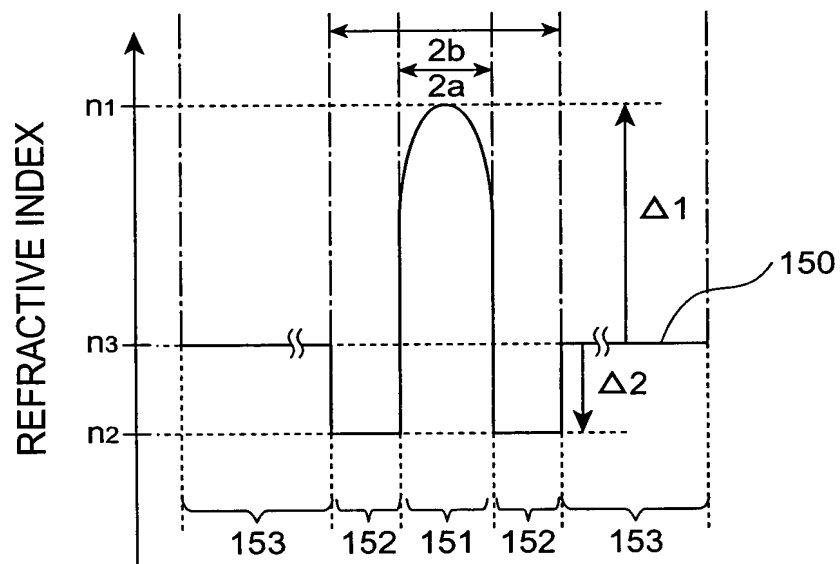
| FIBER TYPE | $\Delta 1$<br>(%) | $\Delta 2$<br>(%) | $\Delta 3$<br>(%) | 2a<br>( $\mu\text{m}$ ) | 2b<br>( $\mu\text{m}$ ) | 2c<br>( $\mu\text{m}$ ) | CHROMATIC<br>DISPERSION<br>(ps/nm/km) | DISPERSION<br>SLOPE<br>(ps/nm <sup>2</sup> /km) | EFFECTIVE<br>CUTOFF<br>WAVELENGTH<br>( $\mu\text{m}$ ) | MFD<br>( $\mu\text{m}$ ) | BEVDING LOSS<br>(dB/km)<br>AT DIAMETER<br>OF 40nm | BEVDING LOSS<br>(dB/km)<br>AT DIAMETER<br>OF 60nm |
|------------|-------------------|-------------------|-------------------|-------------------------|-------------------------|-------------------------|---------------------------------------|---|--|--------------------------|---|---|
| No.1       | 3.0               | -0.35             |                   | 2.5                     | 6.2                     |                         | -147                                  | -0.120  | 0.71   | 4.3                      | 8.69  | 0.02  |
| No.2       | 2.4               | -0.72             | 0.30              | 3.4                     | 7.4                     | 15.4                    | -242                                  | -0.655  | 1.65   | 4.5                      | 0.06  | <0.001  |
| No.3       | 3.0               | -0.72             | 0.30              | 2.8                     | 7.0                     | 14.0                    | -320                                  | -0.595  | 1.47   | 4.2                      | 0.44  | <0.001  |
| No.4       | 2.7               | -0.76             | 0.31              | 2.72                    | 7.3                     | 14.3                    | -329                                  | -0.582  | 1.58   | 4.3                      | 0.11  | <0.001  |

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**Fig.8A**

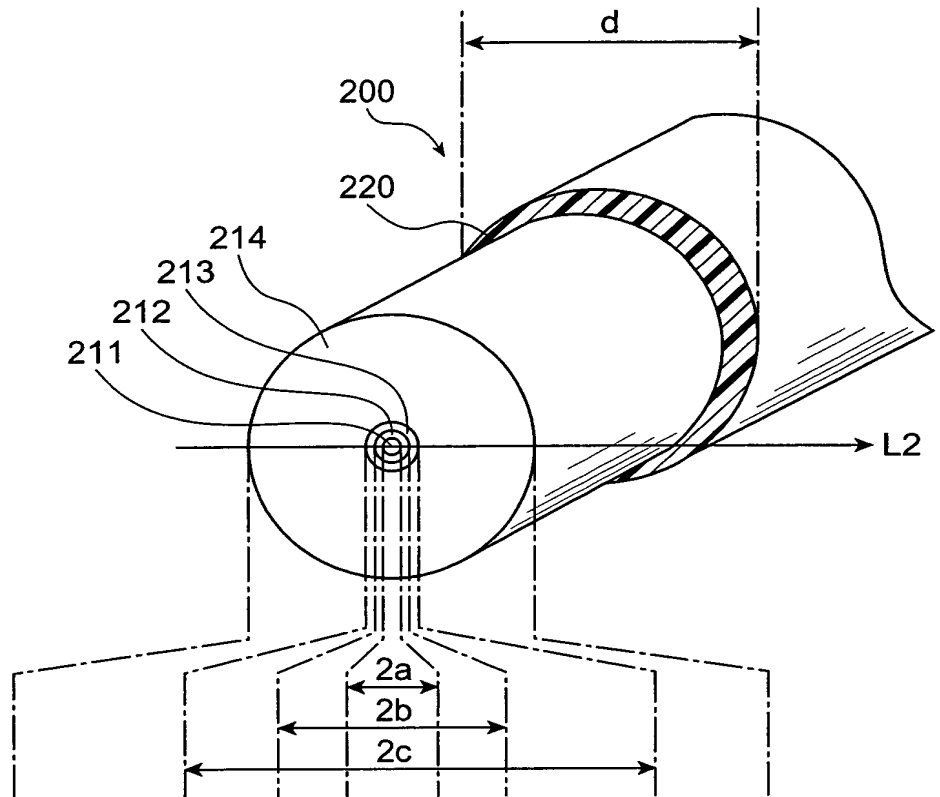


**Fig.8B**

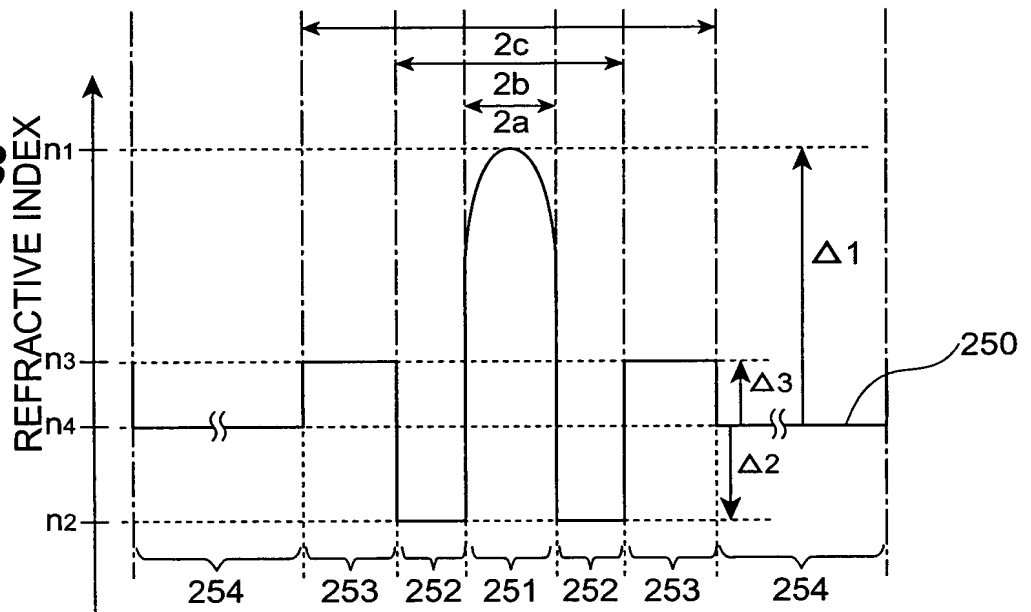


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**Fig.9A**



**Fig.9B**

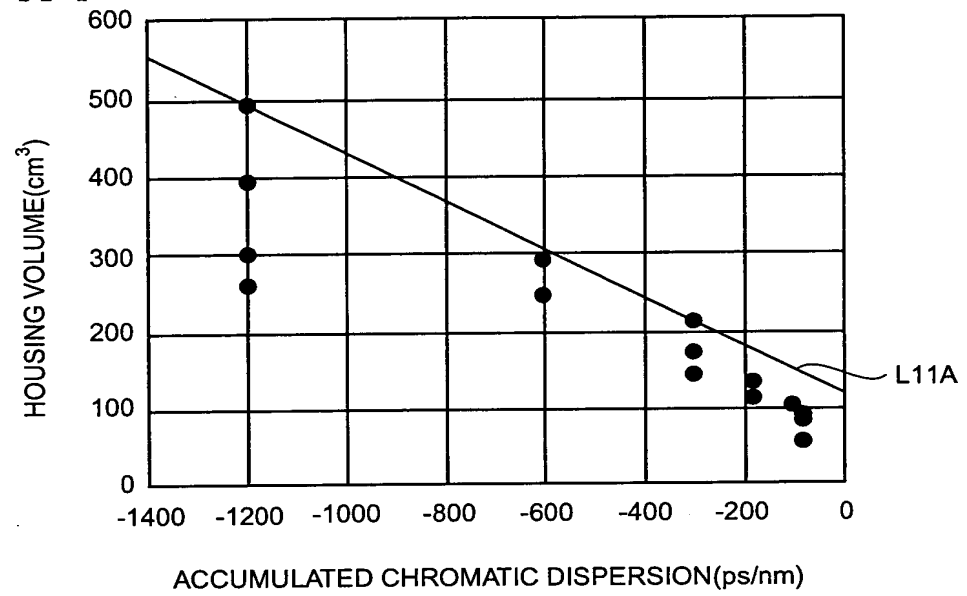
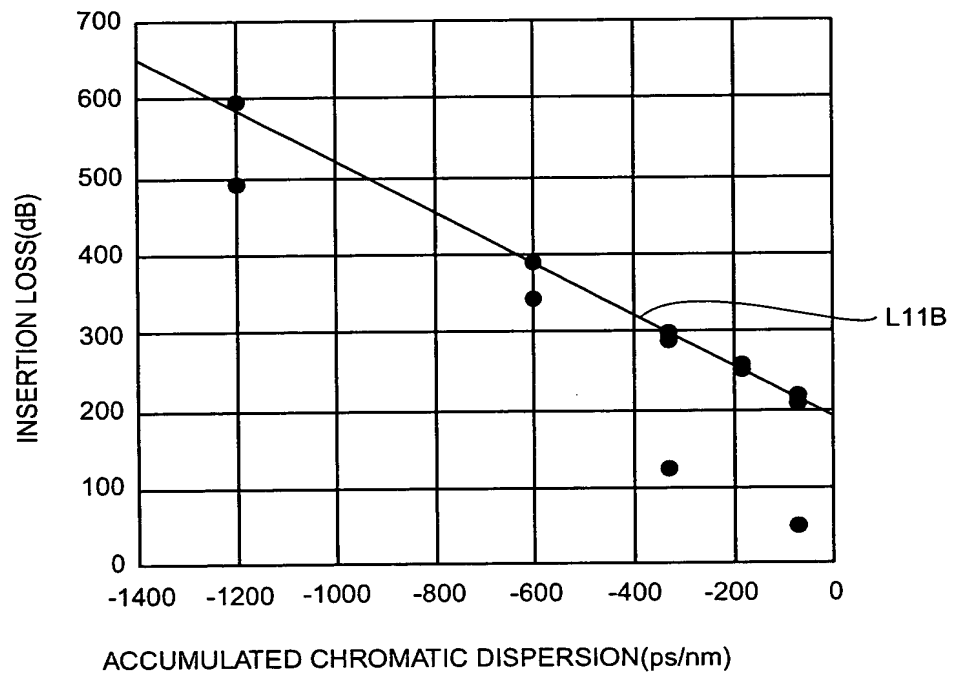


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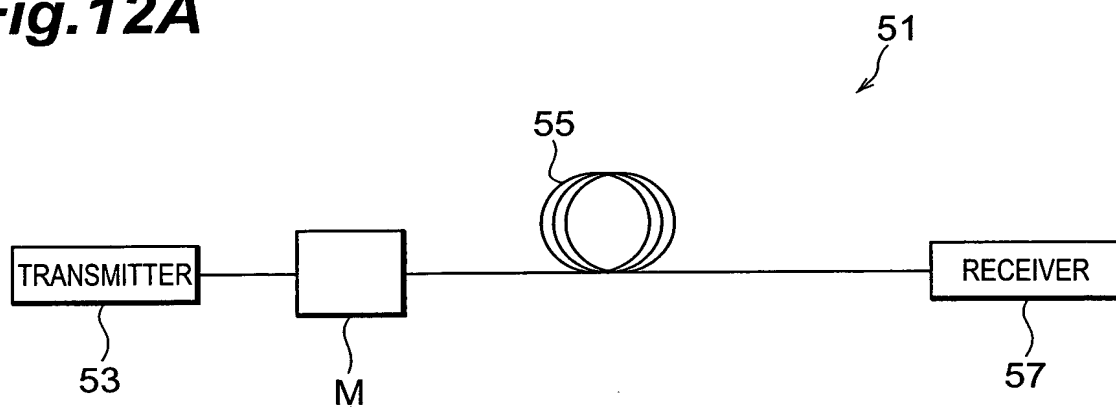
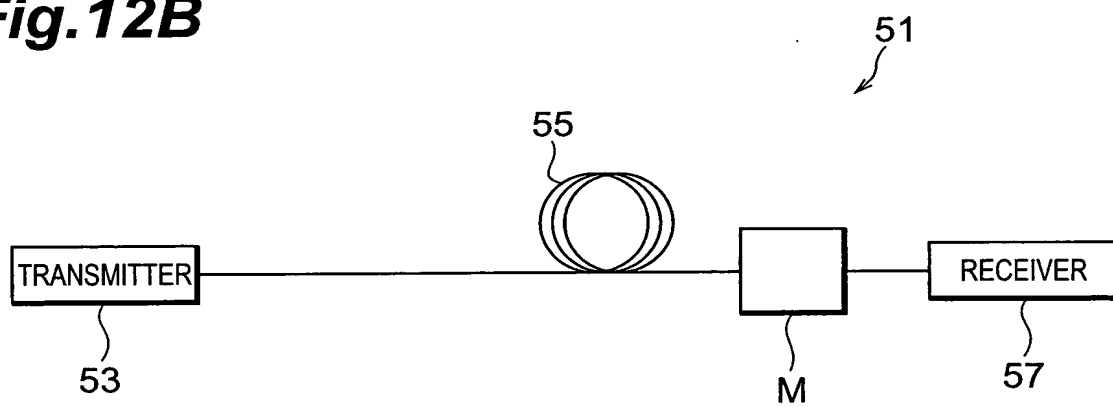
**Fig.10**

| SAMPLE No | FIBER TYPE | FIBER LENGTH (km) | GLASS DIAMETER ( $\mu$ m) | COAT DIAMETER ( $\mu$ m) | ACCUMULATED CHROMATIC DISPERSION (ps/nm) | TOTAL DISPERSION SLOPE (ps/nm <sup>2</sup> ) | INSERTION LOSS (dB) | BOBBIN DIAMETER (mm) | COIL OUTER DIAMETER (mm) | COIL WIDTH (mm) | LONG L (mm) | WIDE W (mm) | HIGH H (mm) | VOLUME (cm <sup>3</sup> ) | FIBER STORAGE CONDITION |
|-----------|------------|-------------------|---------------------------|--------------------------|--|--|---------------------|----------------------|--------------------------|-----------------|-------------|-------------|-------------|---------------------------|-------------------------|
| 1         | No.1       | 2.05              | 80                        | 120                      | -300                                     | -0.25  | 3.5                 | 58                   | 82                       | 12              | 102         | 102         | 17          | 177                       | RESIN MOLDED            |
| 2         | No.1       | 4.09              | 80                        | 120                      | -600                                     | -0.49  | 5.2                 | 58                   | 101                      | 12              | 121         | 121         | 17          | 249                       | RESIN MOLDED            |
| 3         | No.1       | 2.05              | 90                        | 145                      | -300                                     | -0.25  | 3.5                 | 58                   | 91                       | 12              | 111         | 111         | 17          | 209                       | RESIN MOLDED            |
| 4         | No.1       | 4.09              | 90                        | 145                      | -600                                     | -0.49  | 5.2                 | 58                   | 115                      | 12              | 135         | 135         | 17          | 310                       | RESIN MOLDED            |
| 5         | No.2       | 0.33              | 125                       | 185                      | -80                                      | -0.22  | 2.2                 | 40                   | 54                       | 12              | 74          | 74          | 17          | 93                        | RESIN MOLDED            |
| 6         | No.2       | 0.74              | 125                       | 185                      | -180                                     | -0.49  | 2.5                 | 40                   | 68                       | 12              | 88          | 88          | 17          | 132                       | RESIN MOLDED            |
| 7         | No.2       | 1.24              | 125                       | 185                      | -300                                     | -0.81  | 2.9                 | 40                   | 81                       | 12              | 101         | 101         | 17          | 173                       | RESIN MOLDED            |
| 8         | No.2       | 2.48              | 125                       | 185                      | -600                                     | -1.63  | 3.9                 | 50                   | 111                      | 12              | 131         | 131         | 17          | 292                       | RESIN MOLDED            |
| 9         | No.2       | 4.97              | 125                       | 185                      | -1200                                    | -3.25  | 5.9                 | 50                   | 150                      | 12              | 170         | 170         | 17          | 491                       | RESIN MOLDED            |
| 10        | No.3       | 0.25              | 125                       | 185                      | -80                                      | -0.15  | 2.1                 | 40                   | 51                       | 12              | 71          | 71          | 17          | 86                        | RESIN MOLDED            |
| 11        | No.3       | 0.56              | 125                       | 185                      | -180                                     | -0.34  | 2.4                 | 40                   | 62                       | 12              | 82          | 82          | 17          | 114                       | RESIN MOLDED            |
| 12        | No.3       | 0.94              | 125                       | 185                      | -300                                     | -0.56  | 2.7                 | 40                   | 73                       | 12              | 93          | 93          | 17          | 147                       | RESIN MOLDED            |
| 13        | No.3       | 1.88              | 125                       | 185                      | -600                                     | -1.12  | 3.4                 | 50                   | 100                      | 12              | 120         | 120         | 17          | 245                       | RESIN MOLDED            |
| 14        | No.3       | 3.76              | 125                       | 185                      | -1200                                    | -2.23  | 4.9                 | 50                   | 132                      | 12              | 152         | 152         | 17          | 393                       | RESIN MOLDED            |
| 15        | No.3       | 3.76              | 90                        | 145                      | -1200                                    | -2.23  | 4.9                 | 40                   | 104                      | 12              | 124         | 124         | 17          | 261                       | RESIN MOLDED            |
| 16        | No.3       | 3.76              | 90                        | 145                      | -1200                                    | -2.23  | 4.9                 | 40                   | 153                      | 5               | 173         | 173         | 10          | 299                       | RESIN MOLDED            |
| 17        | No.3       | 0.25              | 125                       | 185                      | -80                                      | -0.15  | 2.1                 | 40                   | 56                       | 5               | 76          | 76          | 10          | 58                        | RESIN MOLDED            |
| 18        | No.4       | 0.3               | 125                       | 185                      | -100                                     | -0.177                                       | 0.53                | 58                   | 80                       | 5               | 100         | 105         | 10          | 105                       | RESIN MOLDED            |
| 19        | No.4       | 0.91              | 125                       | 185                      | -300                                     | -0.531                                       | 1.2                 | 58                   | 85                       | 12              | 100         | 105         | 20          | 210                       | RESIN MOLDED            |

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**Fig.11A****Fig.11B**

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**Fig.12A****Fig.12B**

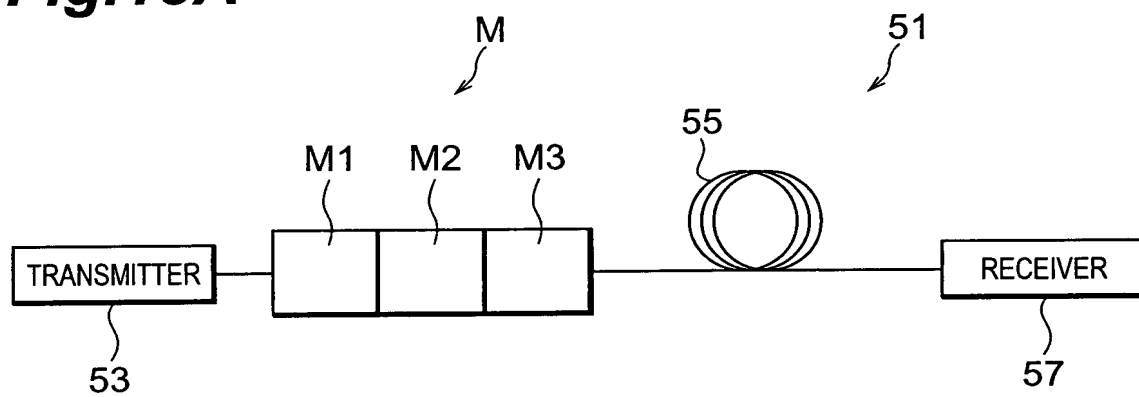
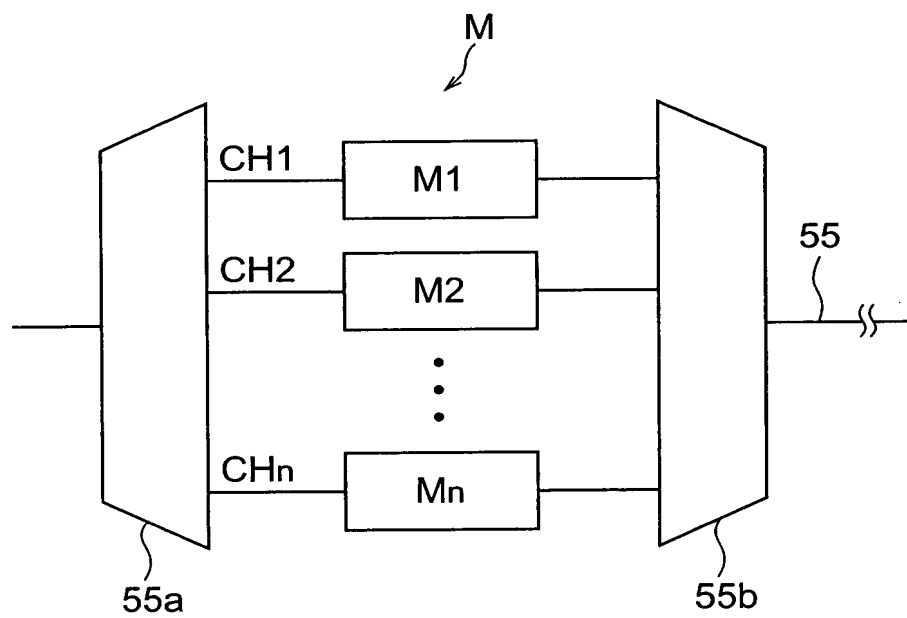
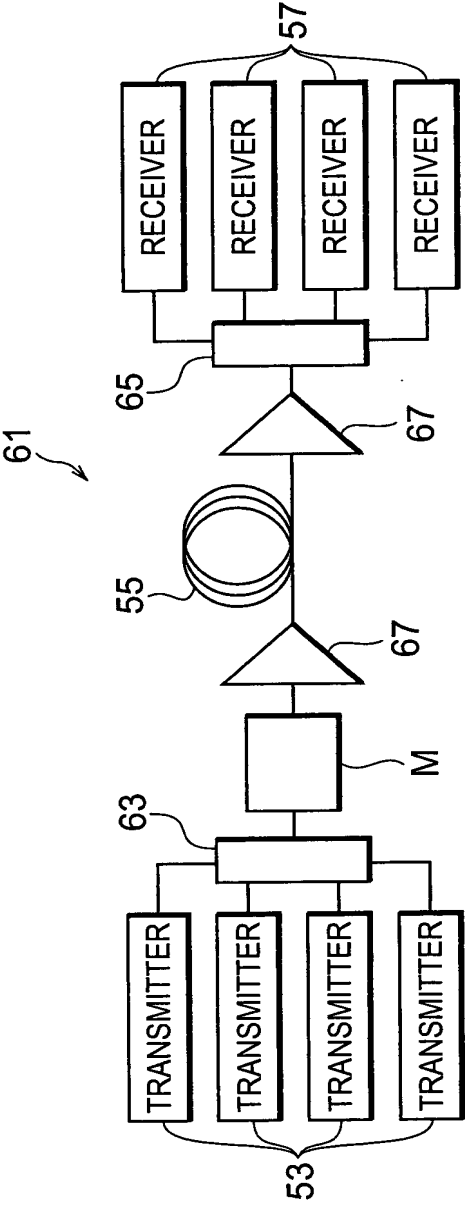
**Fig.13A****Fig.13B**

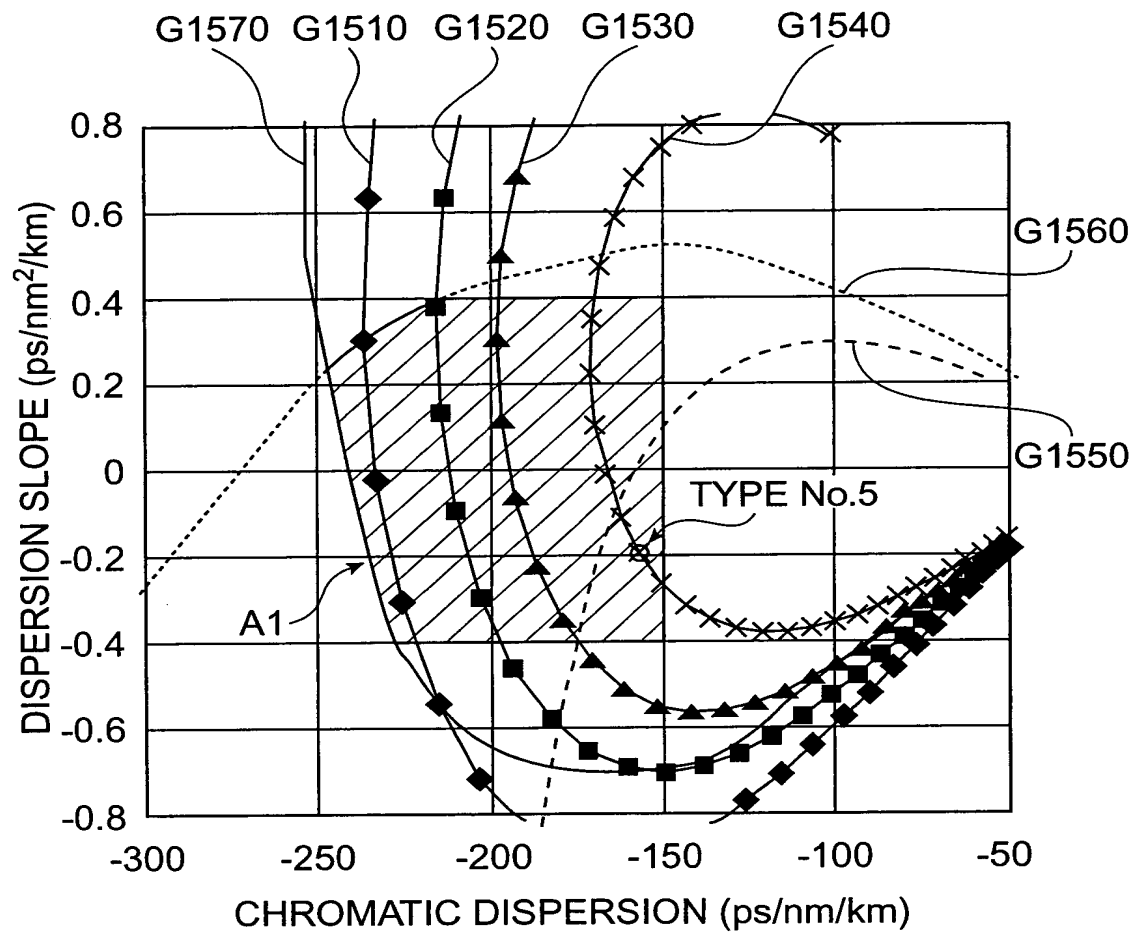
Fig.14

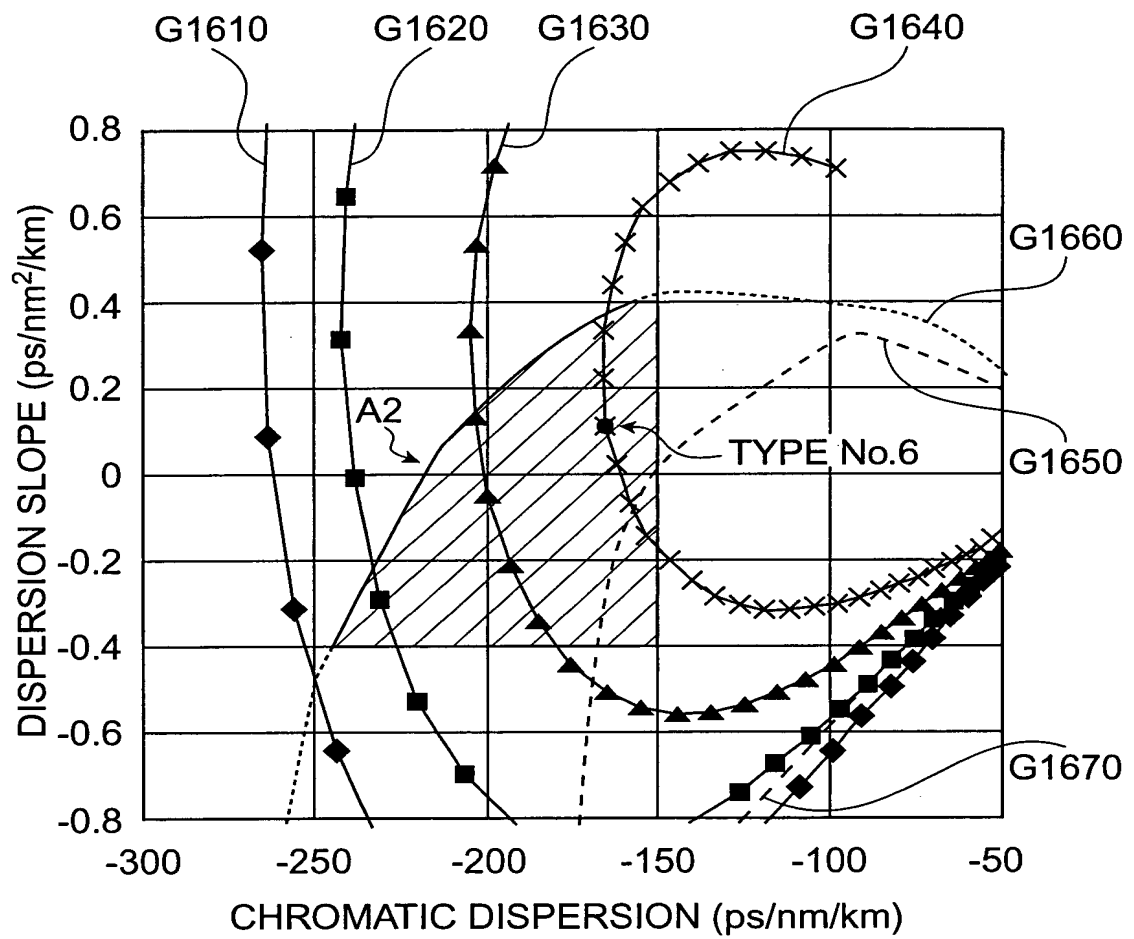


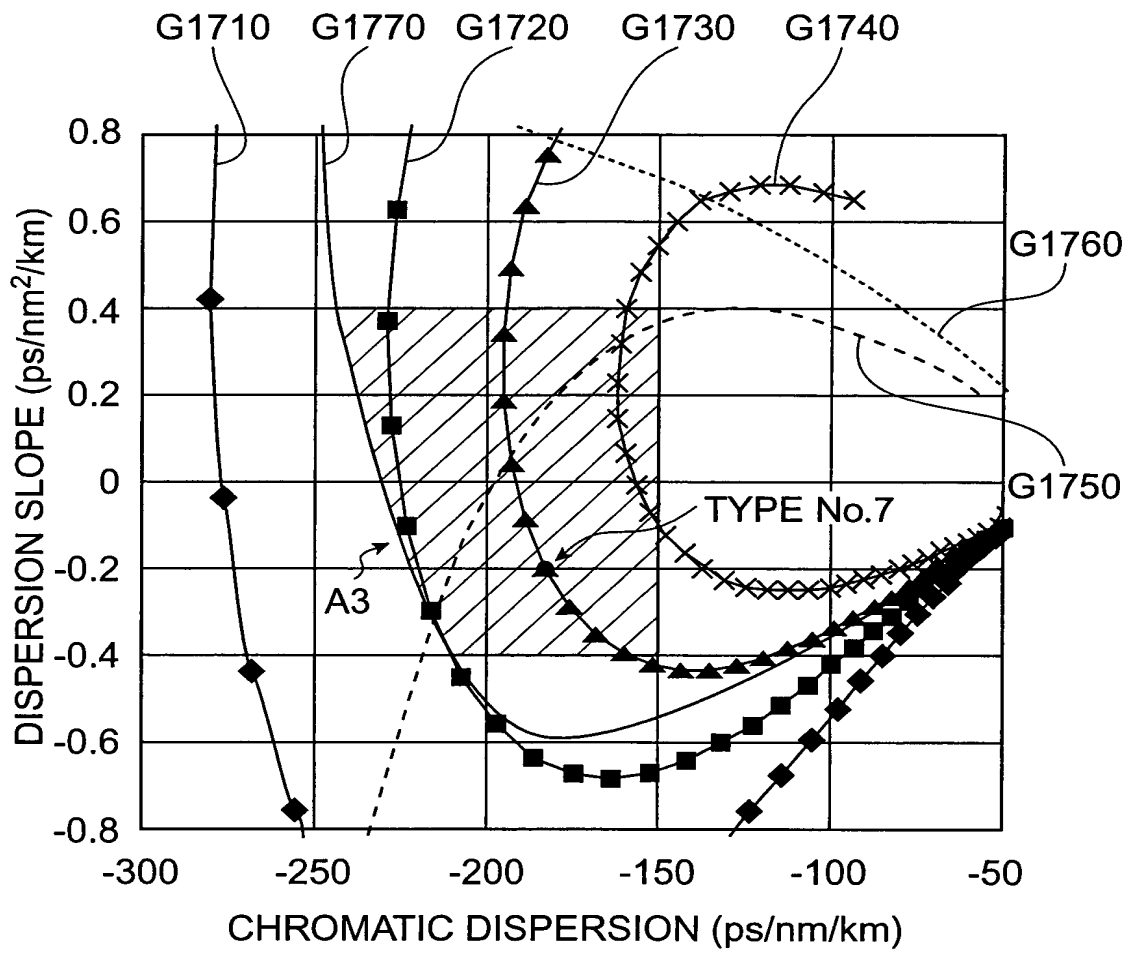
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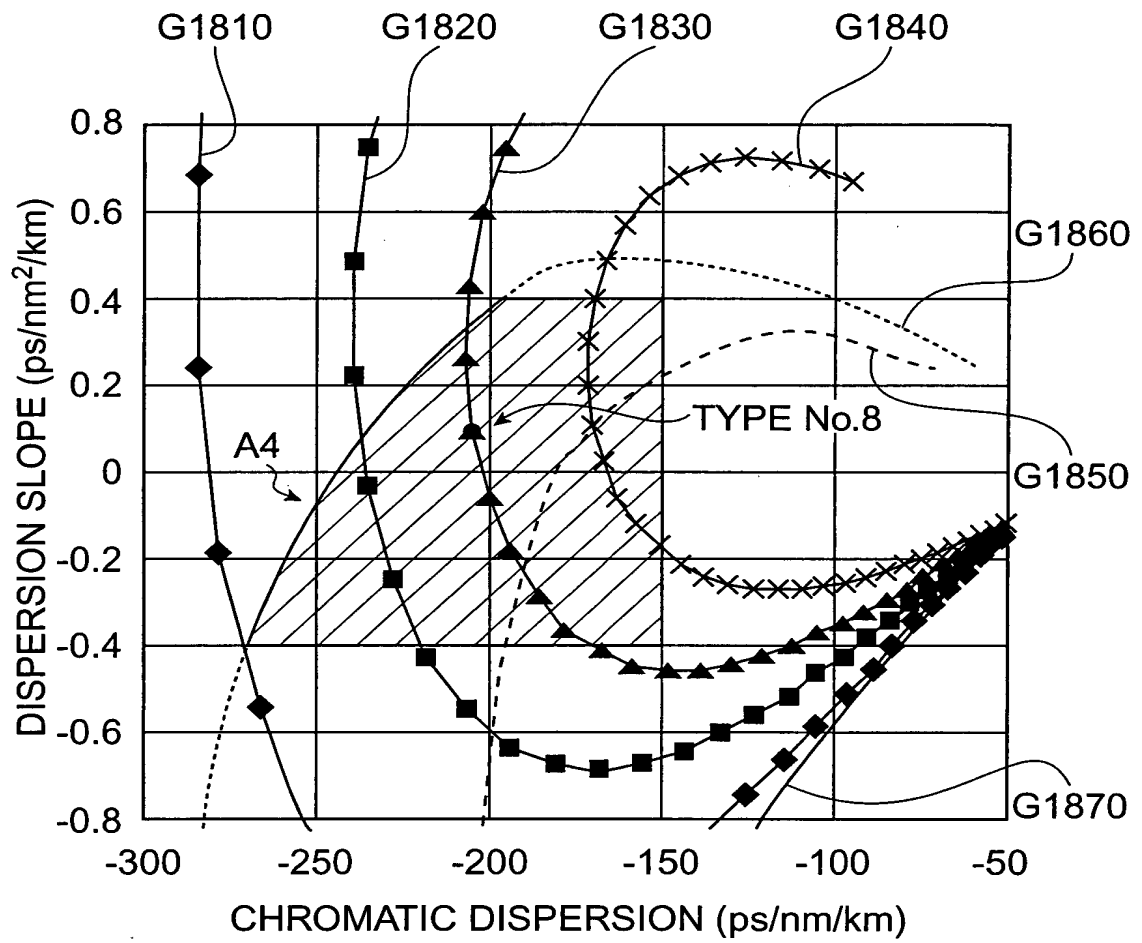
**Fig.15**

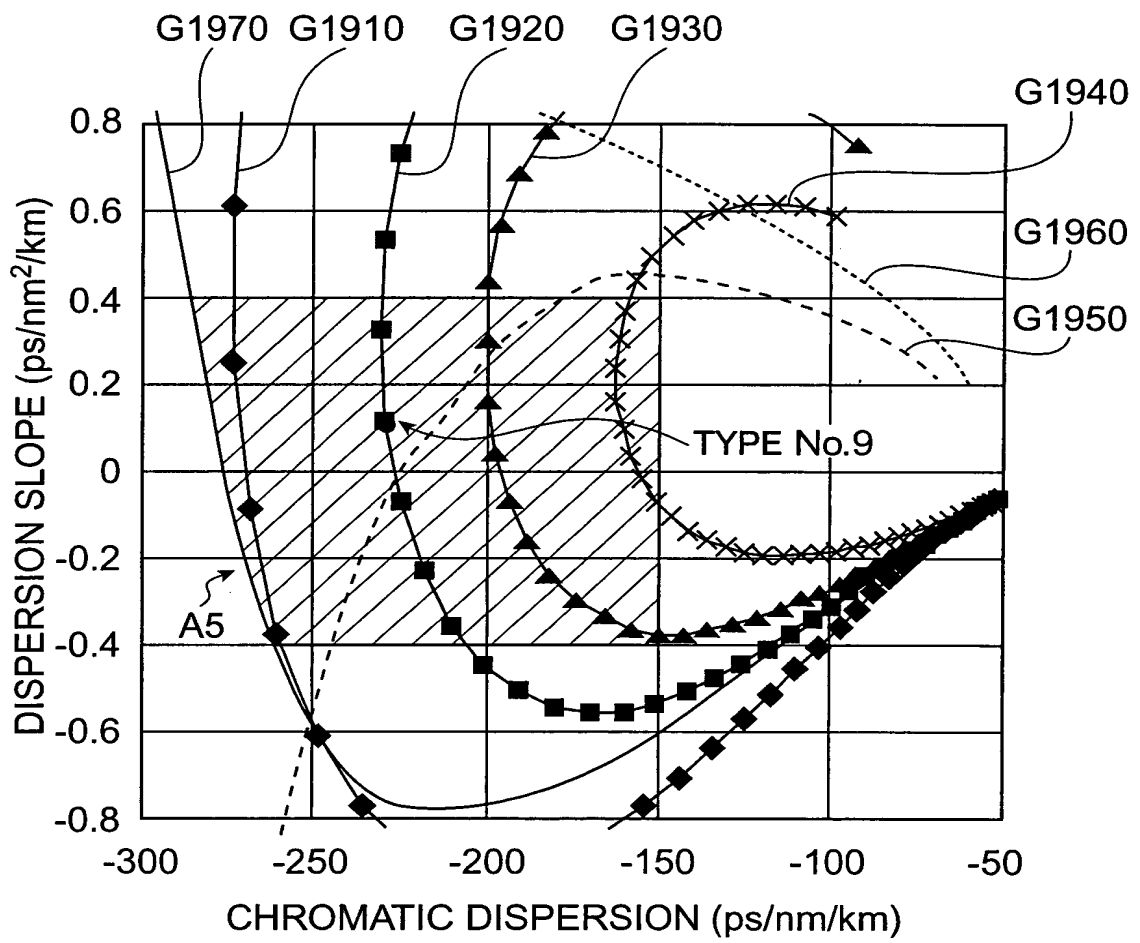
| FIBER TYPE | $\Delta 1$<br>(%) | $\Delta 2$<br>(%) | $\Delta 3$<br>(%) | Ra   | Rb   | 2C<br>( $\mu m$ ) | CHROMATIC<br>DISPERSION<br>(ps/nm/km) | DISPERSION<br>SLOPE<br>(ps/nm <sup>2</sup> /km) | CUTOFF<br>WAVELENGTH<br>( $\mu m$ ) | Aeff<br>( $\mu m^2$ ) | MAIXIMUM<br>CHANGE(%)<br>OF CHROMATIC<br>DISPERSION<br>AT $\pm 2\%$<br>FLUCTUATION |
|------------|-------------------|-------------------|-------------------|------|------|-------------------|---------------------------------------|---|-------------------------------------|-----------------------|--|
| No.5       | 2.4               | -0.6              | 0.6               | 0.30 | 0.7  | 11.1              | -158                                  | -0.193  | 1.372                               | 16.4                  | 8.6  |
| No.6       | 2.4               | -0.7              | 0.6               | 0.33 | 0.7  | 10.0              | -165                                  | 0.117   | 1.218                               | 19.4                  | 4.2  |
| No.7       | 2.7               | -0.5              | 0.6               | 0.26 | 0.7  | 11.4              | -184                                  | -0.197  | 1.438                               | 15.7                  | 8.2  |
| No.8       | 2.7               | -0.7              | 0.6               | 0.30 | 0.7  | 10.0              | -206                                  | 0.091   | 1.216                               | 17.9                  | 5.2  |
| No.9       | 3.0               | -0.5              | 0.6               | 0.24 | 0.7  | 11.1              | -230                                  | 0.120   | 1.400                               | 17.5                  | 4.7  |
| No.10      | 3.0               | -0.7              | 0.6               | 0.26 | 0.7  | 10.7              | -267                                  | -0.378  | 1.295                               | 15.2                  | 10.3   |
| No.11      | 3.1               | -0.74             | 0.32              | 0.19 | 0.44 | 14.7              | -321                                  | -0.132  | 1.706                               | 16.6                  | 10.8   |

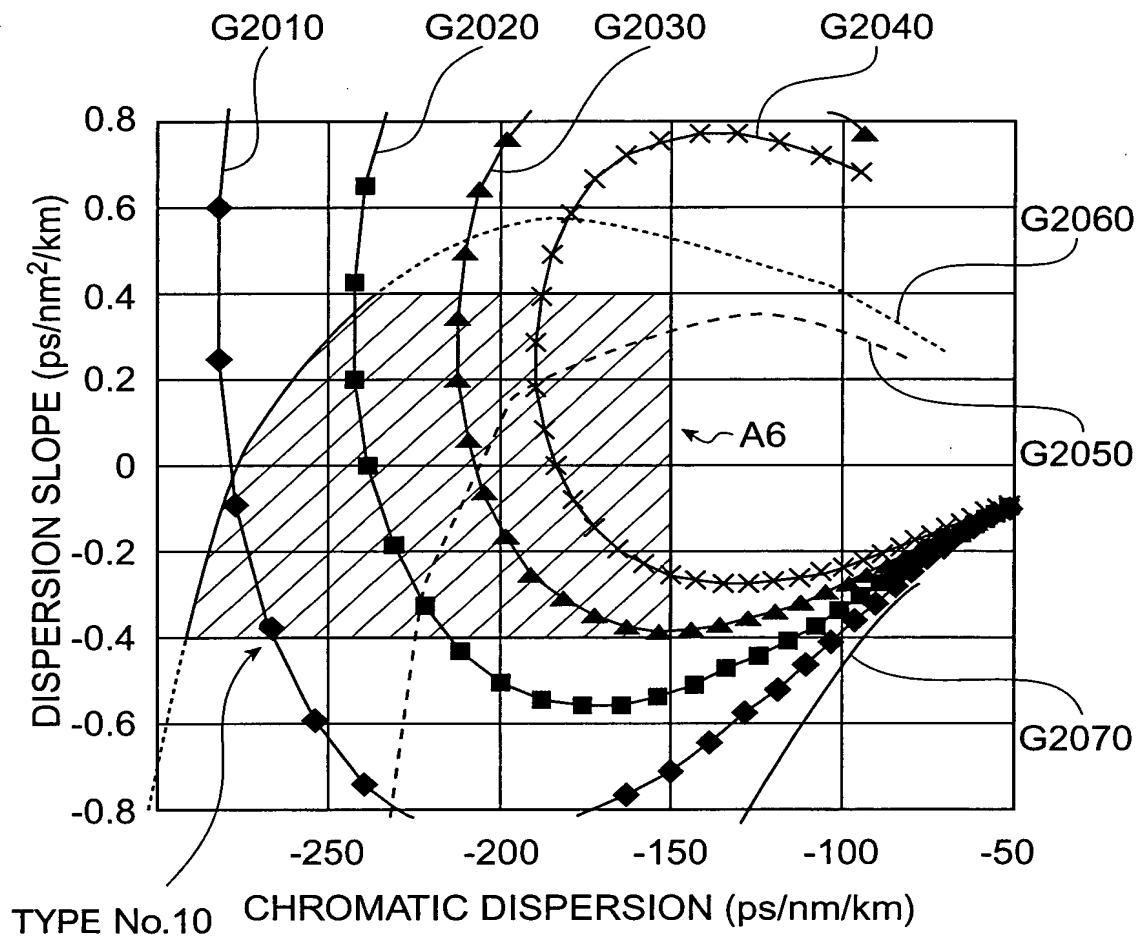
**Fig.16**

**Fig.17**

**Fig.18**

**Fig.19**

**Fig.20**

**Fig.21**

**Fig.22**